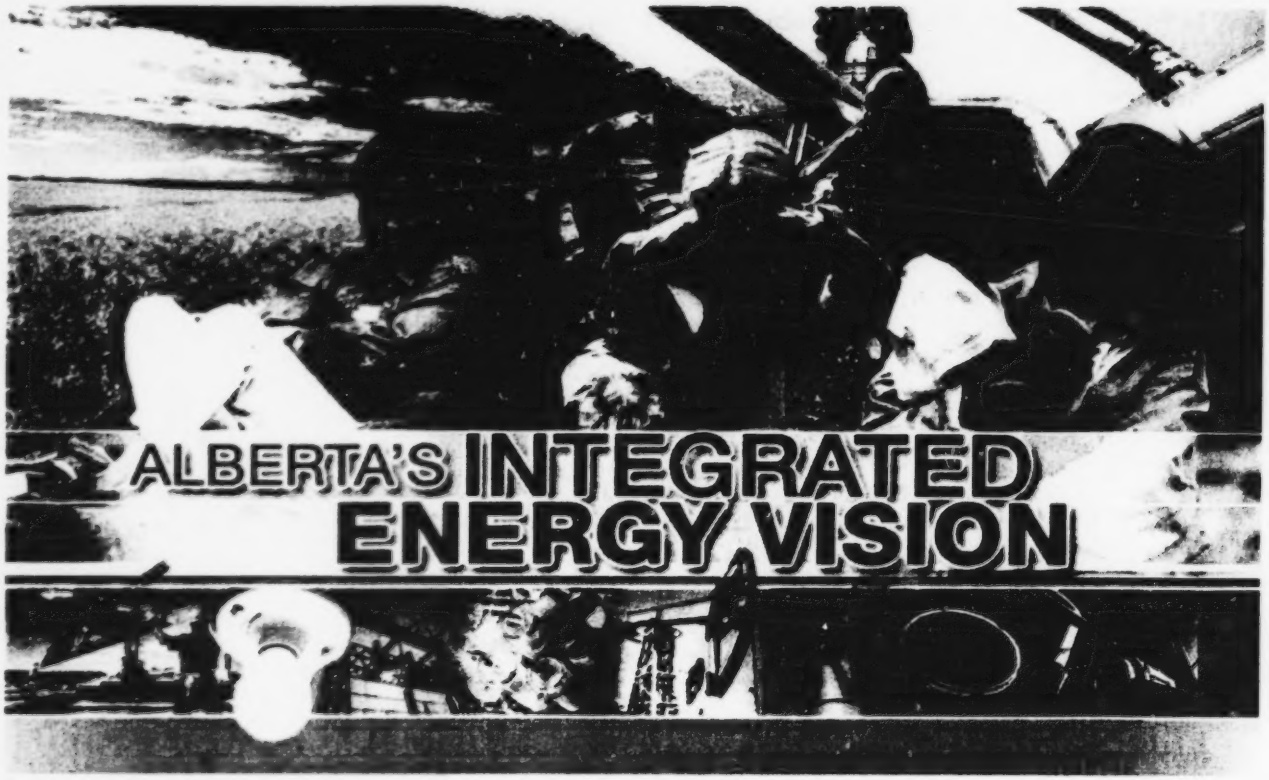

Alberta
ENERGY

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EXECUTIVE SUMMARY

Alberta Today

Alberta has a vast supply of natural energy resources. Huge non-conventional oil and natural gas resources complement Alberta's conventional oil and natural gas resource base. Abundant coal reserves offer opportunities for value-added processing in Alberta, as well as increased exports.

The province of Alberta owns 81% of the province's mineral rights. The remaining 19% are mineral rights, owned by the federal government, on behalf of First Nations or in National Parks, or owned by individuals and companies ('freehold'). The provincial government acts as steward of crown owned resources on behalf of all Albertans.

Energy accounts for 72% of our province's $80 billion in total merchandise exports, and about one-quarter of Alberta's GDP. Nearly one in every six workers is employed in the province's energy sector. Between fiscal years 2001-02 and 2005-06, non-renewable resource revenue has averaged $9 billion a year. These revenues directly support publicly funded programs like health, education and infrastructure, and replace the need for a provincial sales tax; as well as keep other taxes low.

Alberta's energy resources also contribute to the economic well-being of all Canadians through the goods and services required to develop them and the revenue contribution Alberta provides to federal coffers for regional redistribution.

Alberta Tomorrow

Markets for Alberta's oil and gas are changing. For the past ten years the United States (U.S.) has been the principal consumer of Alberta's energy products and, will continue to be a major market for Alberta's energy supply well into the future. Yet, new global markets are emerging. World economies are growing rapidly and rising demand for energy is accompanying this growth. Asia is becoming an important driver of global economic growth.

Alberta offers a secure and stable political and economic environment for the exploration, production, refining, storage, and transportation of oil and gas. Security of energy supply is influencing the global political landscape; and as a result, Alberta is being viewed increasingly as a key strategic player in the global energy economy. This province no longer can be satisfied with the status quo, but must now assess its energy future in terms of opportunity and timing.

Appropriately, the Alberta Department of Energy has a new vision for Alberta's energy sector: Alberta is a global energy leader, using its world-class knowledge, expertise, and leadership to both develop the vast energy resources of the province and to market these resources and abilities to the world.

Future energy development in Alberta must build on the strengths of its non-renewable resources; as well as renewable water, wind, solar, and biomass energy resources, employing integrated strategies that maximize synergies and value-added opportunities for the benefit of Albertans.

Alberta's energy development will be characterized by a new approach—energy integration. This means that energy projects and commodities are no longer treated on a stand-alone basis, but as part of a larger energy scenario. Alberta's Integrated Energy Vision goes far beyond the physical integration of oil and gas resources meaning commodity production processes, proximity and by-products. It also extends to the integrated consideration of broader factors like labour, capital, environmental protection and management, as well as other requirements that are necessary to obtain all of the benefits inherent in developing Albertans' energy resources. Partnering of the public and private sectors of our economy will be critical to future energy development.

A Vision—A Legacy

A vision of Alberta, as a global energy leader, positions Albertans to take a long view in sustaining our high quality of life. Energy development, in this province, will be focused on meeting the expectations of Albertans as the collective owners of our province's energy resources. This vision emphasizes the need to maximize opportunity in the global energy market place so that future generations will continue to experience Alberta as the best place to live, work, and visit well into the future.

ALBERTA'S RESOURCES

Alberta has a vast supply of natural energy resources. Huge non-conventional oil and natural gas resources complement Alberta's conventional oil and natural gas resource base. Abundant coal reserves offer opportunities for value-added processing in Alberta, and increased exports. Future energy development in Alberta must build on the strengths of these resources, as well as renewable water, wind, solar, and biomass energy resources while employing integrated strategies that maximize synergies and value-added opportunities for the benefit of Albertans.

Alberta also has used its resources to provide an abundant supply of electricity which is vital to the development of our energy resource sector. Investment and expansion of electricity generation and transmission capability will continue to be integral factors in the development of Alberta's renewable and non-renewable energy resources.

Albertans Own, Manage, and Benefit from Provincial Energy Resources

Alberta's non-renewable resource portfolio includes natural gas, conventional oil, oil sands, coal, and minerals. The province of Alberta owns 81% of the province's mineral rights. The remaining 19% are owned by the federal government on behalf of First Nations or in National Parks, and by individuals and companies ("freehold"). Along with resource ownership, comes the responsibility to sustain the long-term benefits while conserving a healthy environment. These responsibilities belong to all Albertans, as well as to the Government of Alberta—steward of these resources.

To develop these resources Alberta Energy issues leases to companies willing to undertake exploration and production of the resource. Companies acquire leases through a competitive auction which is market driven, and responsive to the economic principles of supply and demand. The leasing system is managed with the utmost integrity and regard for the interests of Albertans, as the owners of the resource.

To ensure that the wealth generated from the development of these resources is shared with Albertans, Alberta Energy also collects royalties on the production of these resources. Between fiscal years 2001-02 and 2005-06, non-renewable resource revenue has averaged $9 billion a year. In 2005-06, non-renewable resource revenues paid to the government of Alberta totalled $14.3 billion dollars (to replace these revenues it would have required a sales tax of about 26%).* These revenues directly support publicly funded programs like health, education and infrastructure, and replace the need for a provincial sales tax; as well as keep other taxes low.

*Alberta Department of Energy

Oil and gas industry investment has been estimated to have reached record levels in 2005, at $31.2 billion, with an estimated $21.2 billion invested in conventional oil and gas development, and an estimated $10 billion in oil sands development. Investment is a key driver of job creation and business opportunities. In 2005, merchandize energy exports valued at $57.5 billion, accounted for 72% of the value of our province's $80 billion in total merchandise exports and about one-quarter of Alberta's GDP. Nearly one in every six workers is employed in the province's energy sector. This sector employs about 300,000 Albertans directly, and indirectly.

Alberta's energy economy is in transformation. There is a new emphasis on research, technology and innovation, and a growing attention to the value-added side of energy development. Where oil and gas was once produced with more conventional recovery techniques, from underground oil and gas pools with advanced technology, oil is now being extracted from bitumen-saturated sand while natural gas is being recovered from coal seams—enhanced oil recovery techniques are extending the recovery from our conventional resources. There is also an emerging recognition of the need to look at energy resources in an integrated manner.

Alberta's Changing Role In The Global Energy Economy

Markets for Alberta's energy and minerals are growing and changing. For the past ten years, the United States has been the main consumer of Alberta's energy products, and will continue to be the major market for Alberta's energy supply well into the future. Currently, Alberta exports about 1.1 million barrels per day (bbl/d) of crude oil to the United States—supplying 11 % of U.S. crude oil imports. Alberta also exports about 2.6 trillion cubic feet (Tcf) of natural gas per year to the United States—supplying 60% of U.S. natural gas imports.*

Yet, new global markets are emerging. World economies are growing rapidly and rising demand for energy is accompanying this growth. Asia is becoming an important driver of global economic growth. China alone, accounted for about 37% of the increase in world oil demand, from 2004 to 2005.** By 2020, the world economy is projected to be 95% larger than it was in 2003.*** Growing global demand means new markets and opportunities for our energy products and related expertise.

Alberta offers a secure and stable political and economic environment for the exploration, production, refining, storage, and transportation of oil and gas to meet growing global demand. Security of energy supply is influencing the global political landscape and, as a result, Alberta is increasingly being viewed as a key strategic player in the global energy economy.

*Alberta Energy and Utilities Board, U.S. Energy Information Administration
**U.S. Energy Information Administration
***Ibid

This change will have profound implications for how Albertans view themselves and, how the rest of Canada sees Alberta. Perhaps, even more importantly, it will change how the rest of the world sees Alberta. In the future, Alberta must think of its energy resources in an international context and define a new role to meet changing circumstances.

There is a new attitude emerging, with Albertans experiencing a difference in how they view themselves and their province in light of its natural resource assets, and the associated benefits. They sense that they are being recognized nationally and abroad for these vast energy resources, and their expertise in developing these resources in an efficient and environmentally sustainable way. The Alberta energy scene is one where people can participate, build a future, and prosper both individually and collectively. Albertans believe they can compete on the world stage to market their energy resources and expertise and attract investment.

AN ENERGY VISION—A LEGACY

Alberta is a global energy leader, using its world class knowledge, expertise, and leadership to both develop the vast energy resources of the province and to market these resources and abilities to the world.

Alberta, as a global energy leader, positions Albertans to take a long view in sustaining their high quality of life through the future development of its energy resources and expertise. It is about meeting the expectations of Albertans as the collective owners of these energy resources, by maximizing opportunity in the global energy market place while ensuring that we sustain our rich natural environment and our quality of life.

We have the opportunity and the responsibility to make the most of our energy inheritance in a responsible and intelligent way, as a legacy for our children, our grand children and generations to come.

Albertans are up to the task and have developed world-class knowledge and expertise in the development of our vast energy resources. We excel in energy and environmental research, innovation, training, related financial assessment and practices, energy infrastructure, energy project planning and management, energy policy and governance.

Through the Vision, we will be building on our energy inheritance in such a way to sustain the province's energy resources and our quality of life. It means responding to the market demand for our energy resources in a timely fashion with the future firmly in mind.

FOUR PILLARS OF THE VISION

1. Vast and Diverse Energy Resources

Alberta's diverse energy resources are world scale and create a wide range of development opportunities and long-term benefits for Albertans. Alberta holds a diverse resource portfolio which includes conventional oil and natural gas, oil sands, natural gas from coal, coal and other minerals. Alberta must build on the strengths of these resources, as well as integrating renewable water, wind, solar and biomass energy resources into our energy future.

With advances in enhanced recovery, production from conventional energy sources will be extended far into the foreseeable future while other technological innovations will unlock the potential of our non-conventional energy resources. Continued technological advances will increase our potential supply of economic resources, reduce input costs, improve environmental management, and increase market penetration.

Alberta's diversity in energy sources presents real opportunities for expanded value added, including new products and uses based on better integration of our hydrocarbon resources, new feedstocks for petrochemical and refining industries, and greater use of by-products such as titanium, coke, sulphur, and carbon dioxide.

2. Environmentally Responsible Energy Development

Albertans expect that the concept of sound long-term stewardship will be applied to all aspects of energy development both renewable and non-renewable. Responsible energy development takes a full life cycle approach with a view to a self-sustaining ecosystem. Planning for the protection and management of the environment will be integrated with decision making around energy development. Reclamation, remediation and the management of cumulative effects are integral elements of responsible energy stewardship. This ensures that the benefits of energy resource development are realized while still protecting Albertans' quality of life.

Albertans must be confident that the regulations and policies around safety, energy development, access, and environmental standards and protection are effective, reasonable and consistently applied.

Alberta supports an integrated industry and government approach to research, development, and technological innovation based on increased benefits for its citizens from the development of their resources while sustaining a healthy environment.

3. Energy Expertise

Alberta has a workforce with world-class expertise, knowledge and experience in developing energy resources that is increasingly being sought after by others around the world. We are seen as leaders in "Energy Know How".

Albertans excel in energy exploration, research, energy training, energy-related financial assessment and practices, energy infrastructure planning and building, and in energy policy and governance.

Alberta provides a highly developed financial infrastructure of head offices, major branch offices and finance centres related to resource development. Albertans demonstrate superior and growing ability to manage world scale energy projects.

Alberta universities, colleges and technical schools offer world-class training, with graduates in demand worldwide. Continued support of Alberta's universities, colleges and technical schools plays an integral role to maintaining our global energy expertise. This province strongly supports innovative and commercially viable energy research.

4. Competitive Energy Attitude

Alberta provides a number of competitive advantages in how it views its energy resources and the ways it manages the development of these resources that sets it apart as an energy leader.

The province of Alberta offers a unique combination of factors that sets it apart as an energy leader. It provides a vast and diverse resource base augmented by a well-developed and sophisticated pipeline and petrochemical infrastructure, as well as superior environmental technology. This combination encourages future investment in exploration and resource development.

Alberta has an attractive energy investment climate supported by a policy and regulatory environment that provides a high level of certainty while protecting the public interest. Policies are applied fairly (equitable to all participants), are not easily changed retroactively, and remain competitive to maintain necessary investment.

Alberta offers a strong infrastructure to support resource development. Competitive and reliable electricity infrastructure ensures that power and energy are available to support resource development. Well-developed and sophisticated pipeline, and petrochemical infrastructure, provides transportation to markets and markets for resources producers.

This province's energy sector proactively manages its environmental footprint and utilizes leading edge practices in the exploration and development of Alberta's renewable and non-renewable resources. Environmental stewardship is fundamental to maintaining a competitive edge for investment and public support for the energy sector.

GUIDING PRINCIPLES

To realize our vision as a global energy leader, Alberta needs to be guided by principles which reflect the values and expectations of Albertans. The window of opportunity is open for this province to develop new energy sources in the current economic climate as well as add value to its energy assets and export them to the rest of the world.

Albertans stand to gain new opportunities from the energy economy and its potential long term benefits. These following principles will guide and direct energy development, enabling Alberta to succeed in the global marketplace while ensuring that Albertans see and realize the benefits that resource development will bring.

- The Alberta government will exercise a strong stewardship role in the exploration, production and management of the province's renewable and non-renewable energy resources on behalf of Albertans.

- Energy development will be undertaken responsibly to ensure that Albertans have a safe and healthy environment in which to live and raise their families. This includes minimizing the environmental footprint and sustaining healthy air and water quality.

- Albertans will receive a fair share of the economic benefits from development of these resources and that the benefits will be sustainable for future generations.

- Energy revenue will continue to contribute to publicly funded programs that benefit all Albertans.

- Albertans will have opportunities to participate directly in the energy economy. They have access to Alberta's technical schools, colleges and universities to prepare them to be part of the energy economy. Albertans expect to have energy-related jobs and investment opportunities which include renewable as well as non-renewable energy production.

- Energy policies related to access, production and marketing will be applied fairly and equitably to all participants.

AN INTEGRATED ENERGY APPROACH

Energy integration is fundamental to Alberta's future energy development and marks a significant shift in direction. Integration means that energy projects and commodities are no longer treated on a stand-alone basis but as part of a larger energy system.

An integrated systems approach that realizes economic synergies in upgrading, refining, processing, and secondary manufacturing in Alberta using our energy resources, increases value-added opportunities for Albertans and ensures that we capture the best value and, best use for our resources.

Coordination of energy development activity with other resource development industries to ensure future access to resources while minimizing the environmental footprint of energy operations, as well as using opportunities created by other industries, is an equally important element of the Integrated Energy Vision.

Some examples serve to illustrate the opportunities presented by an integrated energy industry through multiple uses of the hydrocarbons and their by-products:

- a new energy efficient bitumen extraction and upgrading technology, in combination with gasification, uses asphaltene residue to produce virtually all the fuel gas and hydrogen required to fuel a commercial scale Steam Assisted Gravity Drainage operation, a related cogeneration facility and the upgrading components;

- one of the by-products of bitumen upgrading and refining is carbon dioxide that can be injected underground. It has a part to play in enhanced oil recovery;

- Ethane, a component of natural gas, is currently used as a feedstock for the petrochemical industry. Ethane from natural gas can be utilized to produce pellets that are used to make plastics products, and directly add value to gas resources; and

- oil sands plants burn natural gas to produce electricity, steam and heat. The electricity is used for oil sands process needs while any excess power may be made available to the larger Alberta electricity grid as part of the total electricity supply for the province.

An integrated approach to energy development will also be important to the future of the electricity industry in Alberta. An important element of the Integrated Energy Vision will be to ensure that Albertans have continued access to secure and reliable electricity through a competitive and effectively functioning electricity marketplace. The Integrated Energy Strategy will continue to foster a diversity of fuel sources for electricity generation.

Alberta has a vast supply of high quality coal to generate electricity throughout this century. Ongoing research and development will continue to explore environmentally friendly means to use coal to generate power. Cogeneration from Alberta's oil sand plants has delivered efficient, environmentally friendly power. Oil sands production processes generate steam and heat as by products, which are harnessed to produce electricity with any surplus made available to the electricity market.

Growing use of renewable sources using wind, water and biomass will increase the supply of 'green electricity' to Alberta customers. In fact, Alberta is the leading wind power producer in Canada, with 287 megawatts (MW) of installed wind generation, and a number of new projects under development. Greater interest in renewable energy is being seen by Alberta oil and gas companies who are diversifying their energy portfolios by investing in renewable energy development as part of their environmental management practices. Alberta's hydro potential represents a significant opportunity for generating future electricity.

Within the Government of Alberta various departments are connected in the development of the energy economy, notably the oil sands and more recently the production of gas in coal. Numerous government departments have a part to play in addressing energy policy, Aboriginal concerns, land use/access policy, labour supply and training, environment, energy innovation and research, municipal services, transportation, infrastructure and education. As these departments in turn work with their stakeholders, a larger picture of energy inter-connections comes into focus.

SUPPORTING THE BROADER GOVERNMENT AGENDA

An Integrated Approach to Unleashing Energy Innovation

Alberta's integrated energy innovation strategy addresses six interrelated innovation challenges:

1) achieve greater extraction of our conventional and unconventional oil and gas resources in an economic and environmentally sustainable way;

2) develop technologies that will increase the market contribution of bitumen and heavy oil by creating a diversified mix of fuels and other higher-valued products;

3) increase the efficiency of upgrading operations, including decreasing capital and operating costs, while reducing total impact on the environment;

4) demonstrate that it is feasible to use coal and other feedstocks (waste from oil sands, forestry and agricultural industries) to produce steam, hydrogen, synthetic natural gas and chemicals with minimal environmental impact;

5) reduce greenhouse gas and other emissions by developing technology to capture, transport and store carbon dioxide and use it to increase oil and gas recovery and release methane from coal beds; and

6) develop, improve and adapt alternate and renewable energy technologies such as hydrogen fuel cells, geothermal and bio-energy.

Alberta Energy will work with industry, Alberta Innovation and Science, and its Alberta Energy Research Institute to encourage technological innovation that will realize the opportunities from continued technological advancement in the recovery and utilization of our energy resources.

Leading In Learning About All Aspects of Energy Production, Conservation and Use

Alberta places a priority on leading in learning, and within this priority there will be a need to pay particular attention to the learning opportunities for Albertans to be engaged in all the aspects of Alberta's growing energy economy. A clear understanding of the needs and opportunities will lead to a growing recognition of the diverse range of occupations employed, in the energy sector, and all of its related services. Traditional areas of engineering, geology, and related natural sciences will need to be expanded. Occupations not always associated with the energy industry will also find employment in the energy sector in such diverse areas as environmental and life sciences, telecommunications and computer science, and other professions such as accounting, finance, and law.

Alberta Energy will work with industry and the education sector to increase awareness of Alberta's energy and mineral resources, industry practices and the economic significance of the energy and mineral sectors, today and in the future. Alberta Energy will develop strategic partnerships with the Ministries of Advanced Education, Education, and Human Resources and Employment to ensure that Albertans realize their full potential to participate in Alberta's energy economy. The Department will also continue to work with other departments including Aboriginal Affairs and Northern Development and industry to develop energy related education curricula and expanded training opportunities for Aboriginal people.

Competing In a Global Energy Market Place

The need for security of energy supply is changing the geopolitical landscape. Alberta is being viewed increasingly as a key strategic player in the global energy economy. The size of Alberta's hydrocarbon resource base has put it on the world stage. Albertans must think of their energy resources in an international context and define Alberta's new role to meet changing circumstances.
The Alberta government has and will continue to rely on harnessing market forces in the development of its energy resources including renewable and alternative energy, and sees a continued reliance on the ability of the private sector to recognize and realize economic opportunities. The Department maintains a competitive fiscal and regulatory regime to encourage continued investment in Alberta's energy resources.

The global context of Alberta's vast energy resources will require close working relationships with the Ministries of International and Intergovernmental Relations, Economic Development, Aboriginal Affairs and Northern Development and Finance.

Making Alberta the Best Place to Live, Work and Visit

Alberta Energy places a priority on ensuring that Alberta remains the best place to live, work, and visit through a responsible approach to providing Albertans the full benefits from energy development. Obtaining the full potential of Alberta's vast energy resources, and all that can be done with them requires strong environmental leadership.

Alberta's *Sustainable Resource and Environmental Management Framework* provides the context for achieving a balanced approach to energy development. The scale and nature of Alberta's energy resources, and the demand for them, requires that Alberta accelerate its effort to be a global leader in the environmental management of all aspects of energy development on a full life-cycle basis.

A new cross-ministry initiative may be needed to focus on an Integrated Energy Vision. The Department of Energy is expanding its role to one of coordinator, addressing aspects of energy development as it applies to various departments across government. Strong strategic partnerships are required with the Ministries of Environment, Sustainable Resource Development, Agriculture Food and Rural Development, Community Development, Municipal Affairs, Aboriginal Affairs and Northern Development and International and Intergovernmental Relations.

Without such leadership, realizing the full potential will not be possible. Maintaining the sustained contribution of Alberta's energy resources to the quality of life of Albertans is critical to the people of Alberta. When developed, managed and marketed in a timely and responsible way, our energy resources place the promise of tomorrow in the hands of each and every Albertan.

OPPORTUNITIES AND CHALLENGES

A number of factors have combined to place Alberta at a crossroads in energy development.

OPPORTUNITIES

The Current Alberta: Conventional Energy Resources

Conventional oil and gas production is at the core of Alberta's energy industry. Industry annual investment in 2005 has been estimated to have reached a record $21.2 billion. Sustaining this industry is fundamental to the Alberta economy and the quality of life of Albertans as it contributes the greatest number of dollars in investment and revenues. This is the "***current Alberta***".

Another Alberta: Enhanced Energy Recovery

Innovation and technology have the potential to unlock "***another Alberta***" from already discovered reservoirs. Alberta has such a large resource remaining that can be developed by applying enhanced recovery techniques. Policies that aggressively support recovery technology are likely to offer large incremental benefits from sustained production and associated royalties.

The Energy Innovation Strategy is designed to respond to the future energy needs of Alberta by investing in results focused research, technology and innovation aimed at creating commercial value, and achieving the highest standards of environmental performance. The Innovative Energy Technologies Program is the major component of this strategy. This program represents a $200 million commitment over five years by the Department of Energy to provide royalty adjustments to a number of specific pilot and demonstration projects that use innovative technologies to materially increase recoveries from existing conventional reserves and encourage responsible, development of oil, natural gas and *in-situ* oil sands reserves.

The Next Alberta: Non-Conventional Energy Resources

A similar yet larger opportunity is before us in unlocking the "***next Alberta***" from our non-conventional oil and gas resources. The Alberta oil sands are a world-class resource capable of sustaining Alberta's energy future for decades and perhaps generations to come. Coal and coal gasification have the potential to produce gas, carbon dioxide, hydrogen and petrochemical feed stocks. Natural gas in coal represents a world-class resource with huge potential. This emerging resource potential is just beginning to be recognized as a highly valued commodity. Natural gas currently provides most of the province's resource revenue. Early estimates indicate that natural gas in coal resources could match or exceed remaining conventional gas reserves. Policies that aggressively support the development of non-conventional oil and gas have the potential to sustain Alberta's resource benefits for decades.

While Alberta is clearly a leader in non-conventional oil and gas resources, renewable and alternative energy are emerging as part of the energy mix and cannot be under-estimated for their potential contributions and benefits to Alberta. These resources are not just from wind and solar, but include biofuels and biomass from Alberta's large agricultural and forestry sectors. More needs to be done to understand where renewable and alternative energy fit into the larger energy scenario.

Future Alberta: Integrated Value-Added Hydrocarbons

Another opportunity that is before us is to realize the potential for the "***future Alberta***" as a world leader in the upgrading, refining, and transforming our hydrocarbons into a vast array of end products that are so much a part of modern living.

Value-added upgrading of Alberta's energy resources is a priority for the Alberta government. Alberta is Canada's leading producer of petrochemicals. Petrochemical production is one of the largest manufacturing industries in Alberta, accounting for over $10.5 billion worth of products, and $6.6 billion worth of exports each year. The viability of the province's current petrochemical industry is based on access to a long-term secure and economic supply of natural gas liquid feedstock, especially ethane, and the ability to develop suitable, competitively priced products for international markets. A major challenge lies in securing and expanding sustainable feedstock supplies, both conventional (natural gas) and non-conventional (oil sands) to enhance opportunities in the petrochemical sector for Alberta.

Continued Investment and Expansion of Electricity Generation and Transmission

Investment in new electric generation and transmission capacity continue to be critical components to the development of Alberta's energy resources. Economic growth will drive peak demand.

Reliability and competitive electricity prices are dependent on continued and timely investment in new electric supply. Projects to supply about 3,300 MW of new power have been proposed by industry. To support this new investment, Alberta continues to monitor its market framework and electric infrastructure capability, and make refinements where needed.

Transmission is the backbone of the electric system. Investment in new generation is dependent on an open and efficient transmission system. Transmission must be robust to ensure continued reliability, and to deliver power to customers when and where they want it. The Transmission Development Policy, followed by implementation of the Transmission Regulation in August 2004, set the direction for new development and investment in transmission to support Alberta's economic and population growth.

There are three key transmission priorities for the future: 1) reinforcement of the major Edmonton-Calgary transmission line to enhance service to a fast growing population and economic corridor; 2) additional investment to enhance the southwest transmission system to support new wind power development; and 3) expansion of transmission in the Edmonton-Fort McMurray area which is experiencing phenomenal growth. Additional transmission capacity will provide assured and long-term electricity supply to Albertans, as well as increase market reach for energy imports and exports. To support new transmission development, streamlining of approval processes and efficient regulatory oversight will continue to be a vital part of the Energy Vision to assure future electricity security and efficiency in Alberta.

CHALLENGES

Human Resources

Developing, attracting, and retaining the human talent required to meet the challenges and opportunities associated with the development of Alberta's energy resource potential requires special attention. Alberta's conventional oil and gas industry is operating at record levels and is having difficulties obtaining the experienced talent required to sustain drilling of about 20,000 wells per year. Alberta's oil sands developers are experiencing similar difficulties. In addition, the energy industries' requirements for innovation and new technologies will strain capacities to deliver research and development. Anticipating future needs as Alberta moves from primary energy production to more value-added hydrocarbon based consumer products will pose additional challenges. Closely related to these requirements to meet the human resource needs of the energy industry, is the need for expanding infrastructure to accommodate the expected rate of growth in Alberta's general population.

Public Support

For energy development in Alberta to continue to be a major factor in the global energy economy and to generate significant benefits, Albertans need to be well informed about the vastness and nature of their energy resources, as well as the potential market opportunities. Just as importantly, they need to be confident that these resources will continue to be developed and managed in an environmentally sustainable manner.

Land Use and Access

Future opportunities to develop both existing and new energy resources will result in an increased need to communicate with and resolve conflicts with other land uses. Urbanization, population growth and a strong economy have combined to increase pressure on, and competition for, use of Alberta's limited land base. Users of a shared landscape will need to work together to reduce their footprint through an integrated land management approach.

Effective management of the competing interests of surface and sub-surface development, agricultural production, forestry, urban settlement, watershed management, recreation and preservation of natural beauty and wildlife habitats, as well as traditional Aboriginal uses, is critical to sustained economic growth and quality of life for Albertans. The Province is developing a comprehensive land use framework to help address these issues.

Improving the delivery of government regulatory processes and streamlining regulatory processes for all parties are critical to maintaining Alberta's high environmental standards, and ensuring a competitive business climate.

Research and Innovation

Seventy three per cent (73%) of Alberta's conventional oil and 56% of its natural gas remains in the ground because we lack technology to extract it. A renewed emphasis on energy research and development is crucial to the development of hydrocarbon based resources already accessed but with significant volume remaining in the ground. Similarly, new technologies offer the potential for expanded use of Alberta's abundant coal resources for power generation, coal gasification and industrial feed stocks.

Research is also critical to managing cumulative effects of energy exploration and development, as well as developing potential renewable and alternative energy resources. An integrated energy vision includes opportunities to develop renewable and alternative energy within the larger energy system. Alberta must continue to support an integrated industry and government approach to research, development and technological innovation.

CONCLUSION

Strengthening Alberta's energy resource developmental potential is critical to Alberta's advancement as global energy supplier and realizing its future as a global energy leader.

The Integrated Energy Vision will focus on:

- the availability of human resources to support the pace of development;
- maintaining Alberta's attractive investment climate during a period of rapid growth and simultaneously developing the infrastructure required to support the development of Alberta's vast energy resource potential;
- maintaining public support for access to energy resources as more development occurs on an increasingly crowded landscape;
- sustaining a responsible approach between resource development and a healthy environment;
- improving and developing public understanding of the opportunities for energy development and their significance in sustaining Albertan's standard of living well into the future; and
- improving the integrated land management approach to reduce the industrial, commercial and recreational footprint while ensuring user access.

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